

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A method for detecting a defect on an object having a plurality of ~~like~~ projected portions formed along an arc with a predetermined pitch, the projected portions being separated by a plurality of cut-away portions, the method comprising:

determining an arc circumscribing a tip of each projected portion of the object ~~to be~~ inspected ;

identifying a plurality of overlapping regions formed by an overlapping portion between an inner portion of a region defined by the arc and a the plurality of cut-away ~~portion of the object~~ portions, and determining an area ~~of~~ corresponding to each of the overlapping regions;

comparing the area of each of the overlapping regions with the areas of the other overlapping regions to determine an area difference for each of the overlapping regions; and

determining that no defect exists on the object when the area difference of each of the overlapping regions is within a range of predetermined criteria, and determining that a defect exists on the object when the area difference of at least one of the overlapping regions is outside the range of predetermined criteria.

2. (Currently Amended) A system for detecting a defect on an object having a plurality of ~~like~~ projected portions formed along an arc with a predetermined pitch, the projected portions being separated by a plurality of cut-away portions, the system comprising:

P20987.A04

an ~~imaging system~~ imager that images the object to be inspected;

an image ~~capture system~~ memory that stores the image as digital data;

a region area ~~detection system~~ detector that analyzes the digital data stored by the image capture system to determine an arc circumscribing a tip of each of the plurality of projected portions of the object, identifies a plurality of overlapping regions formed between an inner portion of a region defined by the arc and a the plurality of cut-away ~~portion of the object~~ portions, and determines an area of each of the overlapping regions;

a region area ~~comparison system~~ comparator that compares the area of each of the overlapping regions ~~determined by the region area detection system~~ with the areas of each of the other overlapping regions and determines an area difference; and

a defect ~~determination system~~ determiner that determines that no defect exists on the object when the area difference of each of the overlapping regions ~~determined by the region area comparison system~~ is within a range of predetermined criteria, and determines that a defect exists on the object when the area difference of at least one of the overlapping regions is outside the range of predetermined criteria.

3. (Currently Amended) A method for detecting a defect on an object having a plurality of ~~like~~ projected portions formed along an arc with a predetermined pitch, the projected portions being separated by a plurality of cut-away portions, the method comprising:

determining an arc circumscribing a tip of each projected portion of the object ~~to be inspected~~;

identifying a plurality of overlapping regions formed by an overlapping portion between an

P20987.A04

outer portion of a region defined by the arc and a the plurality of cut-away ~~portion of the object~~ portions, and determining an area of each of the overlapping regions;

comparing the area of each of the overlapping regions with the areas of the other overlapping regions to determine an area difference for each of the overlapping regions; and

determining that no defect exists on the object when the area difference of each of the overlapping regions is within a range of predetermined criteria, and determining that a defect exists on the object when the area difference of at least one of the overlapping regions is outside the range of predetermined criteria.

4. (Currently Amended) A system for detecting a defect on an object having a plurality of ~~like~~ projected portions formed along an arc with a predetermined pitch, the plurality of projected portions being separated by a plurality of cut-away portions, the system comprising:

an ~~imaging system~~ imager that images the object ~~to be inspected~~ ;

an image ~~capture system~~ memory that stores the image as digital data;

a region area ~~detection system~~ detector that analyzes the digital data stored by the image capture system to determine an arc circumscribing a tip of each of the plurality of projected portions of the object, identifies a plurality of overlapping regions formed between an outer portion of a region defined by the arc and ~~a~~ the plurality of cut-away ~~portion of the object~~ portions, and determines an area ~~of~~ corresponding to each of the plurality of overlapping regions;

a region area ~~comparison system~~ comparator that compares the area of each of the overlapping regions ~~determined by the region area detection system~~ with the areas of each of the other overlapping regions and determines an area difference; and

P20987.A04

when the area difference of each of the overlapping regions ~~determined by the region area comparison system~~ is within a range of predetermined criteria, and determines that a defect exists on the object when the area difference of at least one of the overlapping regions is outside the range of predetermined criteria.

5. (Currently Amended) The system for detecting a defect on an object according to claim 2, further comprising a ~~lighting~~ light box, on which the inspected object is placed, the ~~imaging system~~ imager being positioned opposite to an illuminating surface of the ~~lighting~~ light box.

6. (Currently Amended) The system for detecting a defect on an object according to claim 5, wherein the ~~imaging system~~ imager comprises a band pass filter that filters out light having wavelengths other than the wavelengths of light used by the ~~lighting~~ light box to illuminate the object.

7. (Currently Amended) The system for detecting a defect on an object according to claim 4, further comprising a ~~lighting~~ light box, on which the inspected object is placed, the ~~imaging system~~ imager being positioned opposite to an illuminating surface of the ~~lighting~~ light box.

8. (Currently Amended) The system for detecting a defect on an object according to claim 7, wherein the ~~imaging system~~ imager comprises a band pass filter that filters out light having wavelengths other than the wavelengths of light used by the ~~lighting~~ light box to illuminate the object.